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EXAMINER

MEUCCI, MICHAEL D

ART UNIT PAPER NUMBER

2142

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/758,354

Applicant(s)

ZIMMERMAN ET AL.

Examiner

Michael D Meucci

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

1. This Action is in regards to the Amendment and Request for Reconsideration received on 03 August 2004.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al. (U.S. 5,953,347).

a. As per claim 1, Wong et al. teaches generating a model of the multi-protocol layered network (lines 45-50 of column 1); determines protocol layers (lines 32-33 of column 1); and maps an overlay including network elements, physical links, logical links, and association links (line 63 of column 3 through line 4 of column 4 and FIG. 1-16).

b. As per claim 2, Wong et al. teaches displaying protocols on a GUI (lines 9-17 and 43-50 of column 1); and displaying a protocol layer of the model with different technologies employed in a in visually distinct manners (FIG. 1-16).

c. As per claims 4 and 10, Wong et al. teaches displaying a 3D representation of overlays of two or more protocol layers of the model on a Graphical User Interface (GUI) (FIG. 1-16)

d. As per claim 5, Wong et al. teaches distinguishing between alarms generated at client layer and alarms generated at underlying layers (lines 51-59 of column 1). In the event of a service failure, Wong implements a recovery action that is initiated in a hierarchical manner and by nature will be able to distinguish where the service failure occurred.

e. As per claim 8, Wong et al. teaches a processor because it is inherent that the Newbridge Networks Corp. Intelligent NetworkStation contains a processor (lines 9-17 of column 1). It is inherent in any computing and/or networking system that a processor is present for carrying out instructions.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claims 1 and 2 respectively above, in further view of Mitchell et al. (U.S. 6,628,304).

Wong et al. fail to teach displaying a top view of the overlays of two or more protocol layers on a GUI. However, Mitchell et al. discloses displaying a top level view of the network (lines 32-36 of column 20).

One of ordinary skill in the art at the time of the applicant's invention would have recognized that it is quite advantageous for the network management system of Wong to provide means for displaying a top level view of the network. The top level view of FIG. 3 quickly conveys to the user the hierarchical relationships which exists between different elements (lines 11-13 of column 8 in Mitchell et al.). It is for this reason that one of ordinary skill in the art would have been motivated to include a top level view of the network in Wong's network management system as taught by Mitchell et al.

b. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 1 above, in further view of Dobbins et al. (U.S. 5,790,546).

Wong et al. fail to teach allowing a selection path in the transmission network by using selection criterion. However, Dobbins et al. discloses determining the best path utilizing a number of constraints (lines 33-34 of column 36).

One of ordinary skill in the art at the time of the applicant's invention would have clearly recognized that it is quite advantageous for the network management system of Wong to find an optimal path through a mesh which satisfies a number of independent constraints (lines 44-45 of column 19 in Dobbins et al.). It is for this reason that one of ordinary skill in the art would have been motivated to allow a selection path in the transmission network by using selection criterion.

c. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 6 above, in further view of Dobbins et al. (U.S. 5,790,546).

Wong et al. fail to teach selection criterion from the group comprising: distance of transmission, delay allowed in receiving the transmission, degradation of the transmitted signals, protection constraints, or any combination thereof. However, Dobbins et al. discloses the constraints respectively:

- determination of the location of end systems (line 52 of column 36)
- accounting of each end system's usage of the network based on the number of data packet or byte transmissions (lines 53-54 of column 36)
- quality of service (line 38 of column 36)
- designation of authorized valid connections between first and second end systems (lines 50-51 of column 36).
- including one or more of: (the aforementioned constraints) (lines 32-34 of column 36)

One of ordinary skill in the art at the time of the applicant's invention would have clearly recognized that it is quite advantageous for the network management system of Wong to find an optimal path through a mesh which satisfies a number of independent constraints (lines 44-45 of column 19 in Dobbins et al.). It is for this reason that one of ordinary skill in the art would have been motivated to allow a selection path in the transmission network by using selection criterion.

d. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 3 above, in further view of Mitchell et al. (U.S. 6,628,304). In addition to the combination of Wong et al. and Mitchell et al. for claims 3

and 9, Wong et al. teaches displaying a 3D representation of overlays of two or more protocol layers of the model on a Graphical User Interface (GUI) (FIG. 1-16).

e. Claims 12-13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 1 above, further in view of Dobbins et al. (U.S. 5,790,546).

Wong et al. fails to teach: the protocol layers in the multi-protocol layered transmission network comprise an upper protocol layer being a section of said network, operative according to a packet based protocol and an IP protocol. However, Dobbins et al. discloses: "Data networks today rely heavily on shared medium, packet-based LAN technologies for both access and backbone connections. The use of packet switching systems, such as bridges and routers, to connect these LANs into global internets is now widespread," (lines 40-44 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the protocol layers in the multi-protocol layered transmission network comprise an upper protocol layer being a section of said network, operative according to a packet based protocol and an IP protocol. "An internet router must be capable of processing packets based on many different protocols, including IP, IPX, DECNET, AppleTALK, OSI, SNA and others. The complexities of building networks capable of switching packets around the world using these different protocols is challenging to both vendors and users," (lines 44-49 of column 1 in Dobbins et al.). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the protocol layers in the multi-protocol

layered transmission network comprise an upper protocol layer being a section of said network, operative according to a packet based protocol and an IP protocol in the system as taught by Wong et al.

f. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 12 above, further in view of Dobbins et al. (U.S. 5,790,546).

Wong et al. teaches: the multi-protocol layered transmission network comprises three protocol layers being three network sections respectively operative according to three technologically distinct protocols (lines 9-17 of column 1).

g. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (U.S. 5,953,347) as per claim 12 above, further in view of Dobbins et al. (U.S. 5,790,546).

Wong et al. fails to teach: a plurality of network elements comprises at least two network elements, each one from said at least two elements being operative in more than one protocol layer. However, Dobbins et al. discloses: "This is because the complexities and costs of providing multi-protocol routers increase greatly as performance needs go up," (lines 10-12 of column 3). Multiple routers are common in networks such as the one shown in Fig. 1.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have a plurality of network elements comprises at least two network elements, each one from said at least two elements being operative in more than one protocol layer. "In one important aspect, the present invention is a new



technology referred to as secure fast packet switching (SFPS). SFPS will provide the same or better reliability and security as routers and with much greater packet switching performance, without an increase in cost," (lines 6-10 of column 3 in Dobbins et al.). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have a plurality of network elements comprise at least two network elements, each one from said at least two elements being operative in more than one protocol layer in the system as taught by Wong et al.

#### ***Response to Arguments***

4. Applicant's arguments filed 03 August 2004 have been fully considered but they are not persuasive. The amended claims do not overcome the rejections based on the cited prior art.

5. (A) Regarding claim 1, applicant argues that Wong et al. does not speak about different protocols and/or layers according to different protocols, but just about "integrated management of multiple network of different topologies", etc.

As to point (A), the applicant's argument that Wong et al. does not speak about different protocols and/or layers according to different protocols is not persuasive.

Wong et al. discloses: "Newbridge Networks Corporation's 4602/46020

MainStreet.RTM. Intelligent NetworkStation provides **fully integrated network management of Newbridge's LAN, 36xx Time Division Multiplexing (TDM), Frame Relay, and Asynchronous Transfer Mode (ATM) products**, with a rich Graphical User Interface (GUI) showing network topology and network element drawings, real-

time status monitoring and fault management, and full path (service) management and service recovery capabilities," (lines 9-17 of column 1) which clearly demonstrates multiple protocols (i.e. ATM, LAN, Frame Relay, etc.) in a single network.

6. (B) Regarding claim 1, applicant argues that Wong et al. does not determine protocol layers. The applicant supports this argument by stating: "It is clear to those skilled in the art that multiple networks can be of the same protocol or protocol layer. If the protocol layer of the multiple networks is the same (as in all Wong et al. examples), it is definitely not a multiple-protocol layered network and therefore no (different protocol layers can be determined therein."

As to point (B), the applicant's arguments that Wong et al. does not determine protocol layers is not persuasive. Wong et al. states specifically: "Accordingly the present invention provides an integrated network management system for multiple networks of **different topologies** having a hierarchy of different order bandwidth domains comprising at least one network manager, characterized in that said **network manager manages the multiple networks and establishes links within a topology domain** by implementing hierarchical pass-through routing within a higher order domain in the hierarchy and initiates recovery actions in the event of service failure starting at a domain with the highest order bandwidth," (lines 28-37 of column 1). In combination with the response to point (A), this clearly infers that multiple protocols (ATM, LAN, Frame Relay, etc.) can be used in a single network. As such, links in a topology can be established which requires protocol determination (inherent).

7. (C) Regarding claim 1, applicant argues that Wong et al. does not teach any of the limitations concerning arrangement of the elements and links, which are claimed in the clause (b)\* of Claim 1. \*Clause (b), now shown as clause (2) in amended claims.

Applicant also argues that in contrast to Wong et al., in the present application, the network elements connected by association links between different protocol layers are integrated elements capable of operating in more than one protocol layers.

As to point (C), the applicant's arguments that Wong et al. does not teach any limitations claimed in clause (2) of claim 1 are not persuasive. Figure 5 displays SONET ADM equipment, which "can also be used where a SONET ring provides DS1/DS3/OC-n transport for the ATM technology domain," (lines 29-32 of column 3). This clearly shows again that different protocol layers can be used in the Wong et al. model. Also, the applicant's argument that different types of equipment are recommended to different network domains (lines 32-39 of column 2) is irrelevant since it simply discloses alternative switches that can operate under the direction of the 46020 machine.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., network elements connected by association links between different protocol layers **are integrated elements capable of operating in more than one protocol layers**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As such, the figures

in the prior art show the physical and logical layers, and the association links between them.

8. (D) Regarding claim 2, the applicants argue that Wong et al. does not teach displaying protocols on a GUI and displaying different technologies in visually distinctive manners.

As to point (D), the applicant's argues that Wong et al. does now show an overlay of one protocol layer with different technologies employed therein and displayed in visually distinctive manners. The examiner respectfully disagrees. It is the view of the examiner that Wong et al. teaches, in a service management view, displaying on a GUI an overlay of one (or more) protocol layer of the model (Fig. 1-16), with different technologies employed therein being displayed in visually distinctive manners. Wong et al. clearly states that the different technologies of each layer are visually distinct:

"These technology domain planes allow the 46020 network manager to **view and manage 3/1/0, 3/1, and 3/3 networks as distinct and separate networks**, while at the same time, providing integration of these domains (see FIG. 3). This hierarchical management provides for the most efficient service recovery, with recovery actions starting at the highest-order bandwidth domain.

The 3/1/0 domain 3 may have a DS3 link that is a DS3 path 18 switched in the 3/3 domain, thereby bypassing the 3/1 network. This arrangement is illustrated in FIG.

4.

The concept of Hierarchical Pass-Through Routing can also be extended to provide integrated management of SONET ADM equipment. This is shown in FIG. 5,

where a SONET ring 20 in SONET domain 25 provides DS1 transport for a 3/1/0 domain 3. In FIG. 5, DS1 paths 21 provide the DS1 links for the 3/1/0 domain 3.

This Hierarchical Pass-Through Routing management of SONET ADM equipment can also be used where a SONET ring provides DS1/DS3/OC-n transport for the ATM technology domain.

The **integrated management of different technology domains** can be accomplished through the same 46020 which is managing the Newbridge network elements (see FIG. 6). In this mode, the different domain networks 1, 3, 10 can be represented as separate views on a graphical user interface (GUI). The domains are managed by a 46020 network manager, for example, running on Sun workstation 30 connected to the domains via links 31 and associated with database 32," (lines 13-41 of column 3).

9. (E) Regarding claims 4 and 10, applicant argues that Wong et al. does not disclose displaying protocol layers of the model and the association links between the logical link and its associated transmission path.

As to point (E), the applicant's arguments claim that Wong et al. does not disclose displaying protocol layers of the model and claim the connections links between the domains in Wong et al. connect elements operating under the same technological protocol. The examiner respectfully disagrees. The arrows parallel to the DS1 links (items 6 of Fig. 1) clearly show the association "link" between the separate layers.

10. (F) Regarding claim 5, applicant argues that Wong et al. does not teach distinguishing between alarms generated at a client protocol layer and alarms generated at any of the underlying protocol layers.

As to point (F), the applicant's arguments claim that Wong et al. teaching of initiating a recovery action in a hierarchical manner starting from a domain with the highest order bandwidth does not mean that any alarms will be distinguished between network domains. The examiner respectfully disagrees. In the event of a service failure, the triggering of a recovery action is construed as triggering an alarm. The recovery action will be able to locate the service failure and thereby distinguish between the alarms generated at a client protocol layer and those generated at any of the underlying protocol layers.

11. (G) Regarding claim 8, applicant argues that Wong et al. does not mention a processor contained in the system.

As to point (G), the applicant's arguments claim that Wong et al. does not specify a processor. The applicant respectfully disagrees. It is inherent in any computing and/or networking system that a processor is present for carrying out instructions.

12. (H) Regarding claims 3 and 9, applicant argues that Mitchell et al. does not disclose protocol layers.

As to point (H), the applicant's arguments claim that neither Wong et al. nor Mitchell et al. disclose protocol layers. The applicant respectfully disagrees. Wong et al. has been shown to include protocol layers in the discussion of point (A). The combination of the top view of the network in Mitchell et al. and the system of Wong et

al. would have been obvious to one of ordinary skill in the art at the time of the applicant's invention and is therefore considered obvious.

13. (I) Regarding claim 7, applicant argues that neither Wong et al. nor Dobbins et al. describe/apply their solutions to different protocol layers.

As to point (I), the applicant's arguments claim that neither reference disclose nor suggest any "protection constraint" or combination with it. The applicant's arguments are not persuasive. The claim discloses a Markush group in such that if all or some elements of the Markush group have been disclosed in the prior art, the claim cannot be considered novel under 35 U.S.C. §102 or §103. Dobbins et al. discloses other elements of the Markush group and therefore the claim cannot be considered novel, in this case, under 35 U.S.C. §103(a).

#### ***Response to Amendment***

14. Examiner acknowledges amendment to the abstract, which now appears to be in conformance with MPEP § 608.01(b). Objection has been withdrawn.

15. Examiner acknowledges amendments to claims 1, 5, and 7 for correction of minor informalities. Objections have been withdrawn.

16. Examiner acknowledges amendments to claims 1 and 8 for corrections pertaining to 35 U.S.C. §112 second paragraph. Rejections have been withdrawn on these issues.

***Conclusion***

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 10:00 AM to 7:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey, can be reached at (571) 272-3896. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].



All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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